



Club Repeaters W6RGG/R

147.24(+), 444.200 (107.2 PL)



Bruce Sawyer AA6KX

Presidential Pen

Don't Ever Give Up! Sideband Sweepstakes gave a whole new meaning to ISQ's cartoon on the back page of the SS Handbook. More than one person has commented to me about how strong the urge was to just walk away from the contest on Saturday afternoon and leave the burden of bringing home the gavel to the other members. With both 10 and 15 showing signs of rigor mortis, the masses crammed themselves onto 20 and fought it out with each other, an S9 noise level, and with all the lovely people on 14230/14300. Pulling a full exchange out of the muck became a real feat. Then we all moved to 40 sideband and reacquainted ourselves with the AM broadcast stations and a bunch of nets we never knew existed. Ugh! Surely, we thought, there were better ways to expend our competitive energies. But then an amazing thing happened. With nowhere to go but back up, conditions improved markedly. Saturday night (late) wasn't bad at all, 10 was open the next morning, and Sunday afternoon was reasonably productive. Had you walked away in those first 8 or 9 hours you would have missed all the fun that came later. Most of the high scores I've seen were down some from the last couple of years, but not drastically so. What we lost individually, I think we made up with our numbers. The NCCCs hung in there when it was tough. When it's all said and done, it sure looks to me like we're going to hit that 10M mark. I hear KI3V is already making room for a gavel on the wall of his shack!



The last Word: While you might think that we're done with SS for another year, we're not. Not until the logs go in. Please, please, please: do it now! Send the ARRL your log, even if it was just 2 QSO's. Nobody is going to laugh at your score. Whether you send paper, a diskette, or email the log, just do it. Make sure the summary sheet says "NCCC". No matter what we tell the contest desk, your log won't count for NCCC unless you say it does on your own entry. And remember: if you earned a coffee cup and want to claim your prize, you have to snail mail a check for \$8 along with a label they can use to send it back to you.

Sour Taste: Monday after SS did bring some bad feelings to the surface. One of the SCCC members reported that he had a fellow answer his CQ with a question: "Are you a member of NCCC?" When he

Upcoming Contests

de N6IP

December

10-11 ARRL 10m

31- Straight Key Night

January

7-8 ARRL RTTY Roundup
Hunting Lions CW

14-15

HA DX Test
JIDX Low Band CW
NAQP CW
ARCI Sprint QRP
Hunting Lions Ph

21-23

NAQP Ph

27-29

CQWW 160m CW
ARRL VHF SS
ARRL Novice Roundup
REF Ph
UBA

Santa Claus is Coming to NCCC

HOLIDAY BANQUET

Sunday December 11

\$30.00 per person (incl. tax and service)

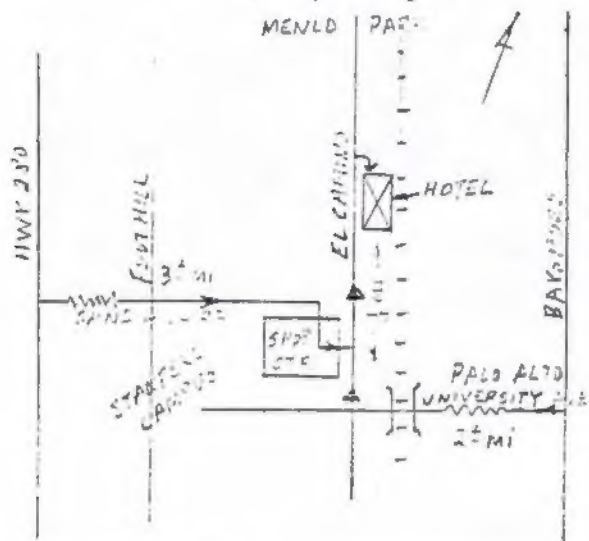
6 pm Stanford Park Hotel

Call Treasurer IMMEDIATELY AND GET YOUR CHECK
TO HIM BEFORE WEDNESDAY, DECEMBER 7

Contests aren't all NCCC does in winning style. We also put on the best holiday party in town, complete with a Santa Claus even you gotta believe. His true identity is a secret, but the JUG has been informed that Tom Schiller has been seen sliding down an antenna or two with care.

See Treasurer's Report, page 9, for details and how-to get your name on the list. Map and directions on page 2.

Directions and Map for Holiday Banquet



Stanford Park Hotel is on El Camino Real between Menlo Park and Palo Alto, carry corner northward, across from the Stanford Shopping Center.

From Bayshore Fry, take the University Avenue turn off, west, continue through downtown Palo Alto under the SPRR bridge. Take the first right which is El Camino Real. Go about 1/2 mile, past shopping center on your left. Hotel is soon on your right.

From 280, take the Sand Hill Road turn off east, about 3 miles, through the Stanford Shopping Center, following the exit flow to El Camino Real. Turn left. Hotel is about 1/4 mile on your right.

Thanks a Mill-i-yun!!!

To Al, AD6E, from Ed and his gofer, for the outstanding JUG he put out last month. He mentioned difficulties. What he didn't know was that that's about par for the month—every month. Our hat's off to him with appreciation and admiration

The Northern California Contest Club

President, Bruce Sawyer, AA6KX

Vice-Pres/Contest Chr, Bob Wolbert N6IP

Sec/Treas, Dick Dievendoff, AA6MC

Directors: Al Maenchen, AD6E

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Publisher, Maggie Troster, KC6NFE

The JUG is the journal of the NCCC, published monthly. Copies are mailed to members whose dues are up-to-date. Send material for publication before last Monday of the month.

(Pen Con't from Page 1)

answered "no", the guy just disappeared on him. The incident provoked a public challenge of NCCC's contest ethics. There is indeed a fine line separating what is and what is not acceptable contest behavior, and sometimes that line gets pretty fuzzy. But personally I think this crosses the line. (Word of warning: so does the CQ Contest Committee. This kind of thing is explicitly mentioned in K3EST's "CQWW Handbook".) As much as we want to win, we don't want to do it in a way that exposes us to charges of poor sportsmanship.

A Hearty Welcome to VY1JA: At our November meeting, a motion was proposed, seconded, and approved to elect Jay Allen, VY1JA, to the unofficial position of "Honorary NCCC Member for 1995" and get Jay on the JUG subscription list. Word has reached our ears that Jay sat down with a NCCC roster during CW SS and checked off NCCC members while he did S&P. At the closing bell, he had 42 NCCC calls highlighted in yellow as having been worked. Talk about having the right sort of friends! But the CQ-Contest reflector also brought tales of horror about what happened to Jay during SSB SS. The story I hear is that Jay decided to run for a while and the resulting pile-up just went berserk. As the story went, decent people were positively embarrassed at the pile-up behavior on display. While I'd like to think this is just a viscous rumor, somehow I suspect there's truth to the story.

NCCC to the World: Looking around the room at our November meeting, I was amazed to realize how many of us were about to fly off around the world to share in the CQWW experience. There was practically the whole YK0A gang there at the meeting, HC8N himself came by to wish us well in SS, the spirit behind VP5VW insisted he was standing up, WM2C was sporting a new C6AHX T-shirt, and of course yours truly was already thinking ahead to reactivating that ZF8BS call. Not present, but there in spirit, were W6OSP and K4UVT, who were about to put ZF1A back on the air. And those are just the operations I know about. While we're not sure whether all this travel is a reflection on DX contests from the left coast or testimony to our contesting spirit, one thing is certain: NCCC was a force abroad in CQWW! I'm looking forward to some slide shows of all this activity during our winter meetings.

CQP Post Mortem: K6PU has reported that the CQP logs he has received are much cleaner than in years past and show we improved in getting the word out on the contest rules. (That's great news, but what I want to know is how many T-shirts we need to order!) Ken went on to offer a suggestion that I pounced on. He thinks we should offer the benefit of our experience in putting on the top state QSO party to some of the other clubs around the country that are struggling to get their own local contests going. The vehicle for doing this would be an article in the NCJ. So now we're off and running trying to isolate and distill the secrets of our success with CQP. Want to help? Your ideas are welcome. Just why is this contest so popular when most of the other state QSO parties are so lifeless? What of our experience with CQP can we share with other clubs that would help them with their own contests? What should we be doing to make CQP even better? Drop me a note and share your thoughts.

de N6IP

Wolbert's Words

SS 94 is History Congratulations on winning Gavel #10! Judging by the scores already received as of November 23—just a couple of days after SS Phone—we have met our goal of 100 active stations and are very close to our 10 Meg overall goal (9.8 million points). Assuming we all submit our logs to Newington, this is the first time in over a decade that any club has had over 100 entries. Since we certainly have a dozen or so outstanding scores, I'm sure that our total will surpass the 10M point lever—again, for the first time in over a decade. FB job! See our 100 early-bird scores included in this issue. SS Phone Recap Conditions were miserable on Saturday. Not many of us met our score commitments due to the high A-index. That means we won't get our 14 million points Bruce wanted, but it isn't really all that terrible; all o us—including our competitors—live under the same ionosphere. When we drop 20%, they do also. The winners are those that do not give up. The hands began improving Sunday. Activity was down and smaller stations could hold a CQ frequency with good rates Sunday evening. Both AD6E and I ran at over a 100/hour rate for short periods Sunday afternoon, a sharp contrast to the sub-20 rates of Saturday afternoon and evening. NCCCers were everywhere! One W1 mistakenly posted his entire 600+ QSO phone log on the contest reflector. Looking through it, I count over 45 NCCCers. The big guns and nearly all local logs have many more. The Grapes They Are A Sour... Our neighbors to the south tried their best to wrest the gavel from us this year. Their disappointment is evident in comments made on the Contest Reflector after some of our BIG scores were announced. More about this later.

You will get a better summary of our SS victory as well as CQWW (etc.) "war stories" at banquet and in next JUG.

Please get your SS logs to the ARRL! We cannot win without 'em. Address them to : ARRL Contest Branch 225 Main Street Newington, CT 06111 The postmark deadline is December 20. Use the fluorescent green labels or write CLUB COMPETITION: YES, NORTHERN CALIFORNIA CONTEST CLUB on your summary sheet.

For club award eligibility, get your scores to me by any of the usual routes: Send your scores to: N6IP via DXPSN Phone/FAX (408) 258-1015 U.S.

Mail Bob Wolbert 10028 Bon Vista Ct.
San Jose, CA 95127

Internet My address may change do not rely on it
Congratulations on Gavel #10, 73 & Merry Christmas



NCCC Scores, December 1994

(Sweepstakes scores appear separately)

California QSO Party '94 Scores			
Station	QSOs	Mult	Total
Single Op			
NI6T	1469	58	202,130
WX6M	1208	58	140,186
KJ6DL	808	57	97,185
W6BSY (CE:LAKE)			
	564	55	77,605
AA6MC	508	54	74,358
KG6I	223	47	21,009
WA8LLY/6	136	33	6,798

CQWW Phone				
Station	QSOs	Z	C	Total
WR6R/KH6	3567	123	258	3,972,687
NI6T	480	100	216	401,636
K6HNZ	852	33	93	292,446-14
AB6YL	209	60	82	72,846
W6FAH	104	42	63	24,465
AA6YX	77	30	39	14,559
				LP
AJ6V	56	26	40	8,778
WA8LLY/6	42	16	25	3,690

CQWW RTTY			
Station	QSOs	Z	Total
NI6T	382	121	88+54 186,730
JARTS RTTY			
NI6T	285	54	21 48,900

Key Notes



If you missed Ace, N3AHA in SS this year, here's the reason: Carlie, born, September 13, 8#, 5 oz. Mom Ann and Carlie doing beautifully, especially since it looks like Dad is not missing a minute to see Carlie's education begins aright!

SS CW Scores to Date

as reported to Bob, N6IP

Station	QSOs	Sections	Score	Class	Hours
K13V7	1308	77	201,432	SO	
W6QHS(W6CF)	1276	77	196,504	SO	
N6RO	1202	77	185,108	SO	
W1FEA	1183	77	182,182	SO	
WC6H	1170	77	180,180	SO	
AA6MC	1150	77	177,100	SO	
K6KM(N4TQO)	1139	77	175,406	SO	
N6TV	1136	77	174,944	SO	
N6EK	1133	77	174,482	SO	
N6IP	1118	77	172,172	SO	24
WA6AUE	1117	77	172,018	SO	
AA6KX	1100	77	169,400	SO	
K2MM	1010	76	153,520	SO	23
AD6E	903	77	139,062	SO	
AB6WM	792	77	121,968	SO	
N16T	785	76	119,320	SO	
AE6Y	782	76	118,864	SO	15
W6RGG	750	77	115,500	SO	18
W6BIP(+N1EE)	730	74	108,040	MS	21
N6PN	716	74	105,968	SO	
K6ANP	672	77	103,488	SO	
N6RA	667	77	102,410	SO	
W6REC	650	77	100,100	SO	
KA6W	645	75	96,750	SO	21
W6OAT	585	77	90,090	SO	
W6BSY	547	77	84,238	SO	
AA6YX	542	75	81,380	SO	
N6XI	501	74	74,148	SO-A	
AE0M	398	73	58,108	SO-A	
K6BPB	406	70	56,840	SO	
WW6D	382	73	55,772	PKT	
AB6YL	366	71	51,972	SO	
WA6SDM	357	72	51,408	PKT	
K6MA	348	72	50,112	SO	
K6LRN	350	70	49,000	SO	
N6EE	278	74	41,144	PKT	
AA6QY	276	70	38,680	SO-A	
WA6TKV	278	69	38,364	SO	
KM6OH	266	67	35,644		
KV6S	296	60	35,520	SO-B	
W6OSP	240	60	28,800	SO	
KJ6DL	226	60	27,120	SO-B	
NP4IW/6	199	60	23,880	SO	
N6OM	204	58	23,664	SO	14
WA8LLY	155	61	18,910	SO-B	7
W6YKM	149	56	16,688	SO	
AC6DQ	69	31	4,278	SO	
N6TNW	26	19	988	SO-A	
WZ6Z	24	20	960	SO-B	
WE6F	1	1	2	SO-A	
			0	SO-B	
			0	SO-B	
			0	SO-B	
			0	SO-B	
			0	SO-B	

50 Entries, Total Points SS Phone:	5,185,036
50 Entries, Total Points SS CW:	4,583,628
Grand Total	9,768,664

SS Phone Scores to Date

as reported to Bob N6IP

Station	QSOs	Sections	Score	Class	Hours
K13V	2113	77	325,402	SO-B	24
WC6H	1864	76	283,328	SO-B	24
W6QHS	1652	77	254,408	SO-B	
W1FEA	1637	77	252,098	SO-B	24
WA6AUE	1534	77	236,236	SO-B	24
KD6UO	1382	77	212,828	SO-B	24
AA6KX	1324	77	203,896	SO	24
N6RO	1260	77	194,040	SO-B	17
N6BT (NU6S)	1098	77	169,092	SO-A	
N6EK	1071	77	164,934	SO-B	
WR6R	1023	76	155,496	SO-B	
AE6Y	1001	77	154,154	SO-B	18
N16T	975	77	150,150	SO-B	
WB6MZQ	954	75	143,100	SO-B	20
AA6MC	886	77	136,444	SO-B	22
N6RA	859	77	132,286	SO-B	
AB6WM	845	77	130,130	PKT	15
KJ6DL	844	77	129,976	SO-B	24
W6BSY	819	77	126,126	SO-B	
WA6TKV	726	77	111,804	PKT	22
K6KM (-N4TQO)	724	77	111,496	MS	
W6RGG	673	77	103,642	SO-B	
N6IP	669	77	103,026	PKT	23
N6TNX (-N6TNW)	682	75	102,300	MS	
AC6DQ	660	77	101,640	SO-B	
AD6E	660	77	101,640	PKT	17
WA6CTA	655	77	100,870	SO-B	
W6REC	650	77	100,100		11
N6CCL	577	77	88,858	SO-B	
AA6YX	524	77	80,696	SO-A	24
WA8LLY	351	75	52,650	SO-A	12
N6EE	314	77	48,356	SO-B	
W6GPM	305	76	46,360	SO-B	
W6ISQ	299	77	46,046	SO-B	11
AE0M (+ N0BBS)	314	71	44,588	MS-A	21
K6LRN	296	73	43,216	SO-B	15
KM6OH	298	72	42,912	SO-B	15
N6UUG	265	67	35,510	SO-B	
WZ6Z	232	68	31,552	SO-B	
N6GRJ	194	68	26,384	SO-B	
WE6F	202	62	25,048	SO-B	
AJ6T	170	59	20,060	SO-B	
AB6EQ	159	63	20,034	MS	
KG6I	133	57	15,162	SO-A	
WA6SDM	142	52	14,768	SO-B	
K6MA	128	55	14,080	SO-A	
AA6QY	117	53	12,402	SO-A	
W6DPD	120	47	11,280	MS-A	8
N2ALE			10,350	SO-A	
N6XI	103	44	9,064	SO-B	
KA6ING	28	19	1,064	SO-A	

Quest for the Perfect Contesting Rig

The Icom 736

de Ken Silverman, WM2C

I have been toting around an old FT757 for over 10 years on my contest-expeditions, but knew the radio was lacking many of the features deemed necessary in today's contest-radio. I couldn't rationalize buying a new radio until the "perfect" replacement came around. My contest-expedition radio replacement criteria was: the latest technology and contest features, computer controlled, built in tuner, built in 110v/220v power supply, and 6m. In addition, the radio had to be small and light enough to be hand carried on the plane. A pretty tall order. So I waited, and waited.

Then during the spring of 1994, the Icom 736 came along. The IC736 is Icom's latest entry into their totally revamped line of HF and VHF radios. The IC736 puts out 100w on all the HF bands, and 6m. Though this radio has a striking resemblance to the IC737A, it is quite a different radio when it comes to features. The combination of features spells one thing to me: The perfect contest-expedition radio!

The front panel has a clean and uncluttered layout. Only the most widely used features have knobs, which are easy to find in the heat of the battle. All other features are controlled by almost flush push button keys. The large and bright LCD display shows both frequencies when running split - a nice feature for pileups. The radio has two key jacks in the back of the radio: one for the internal keyer, and one for a straight key. The key ports are in parallel, which makes it great for contesting with a computer. The QSK is real smooth for you CW guys. And of course, the radio is totally computer controllable with the proper interface.

Frequency/band selection is via keypad entry. The 736 has double band stacking registers: press a band

key to go to that band (with pre-stored mode & frequency), press it again, and you toggle to the 2nd in-band frequency. The VFO tunes in 1 khz increments, and the tuning rate can be set to give you 200 Hz/per revolution. Great for spreading out the band.

The radio has a neat "note pad" feature. Just hit the MP-W key (memory-pad write) and it puts the frequency/mode/filter/antenna selections in a note pad. Hit the MP-R key (memory-pad read) and it brings up the latest note pad entry. Slick for creating a band map if you are not running CT v9. The size of the note pad can be changed to five or ten entries.

The IC736 has a triple conversion receiver which is quiet, and the audio sounds great. The unit comes with stock 2.3 khz filters. The only filter options are for CW: 250 or 500 Hz filters for the second and/or third IF. My preference is 500 Hz filters while running a pileup - but regardless of your choice, both the second and third IF filters are needed to bring the receiver to life. To help fight interference there is a passband tuning feature, and there is a clearable RIT (unlike the 737A). I first used the radio during Field Day, and the receiver was nice and quite, even while I was on CW, and another transmitter was on SSB just 200 kc up! There was no hint of phase noise and we were not using any bandpass filters. That's a pretty good non-scientific test, and it passed with flying colors.

The radio is great on 6m - a mandatory band for most expeditions. It puts out 100w on 6m, and the internal tuner will also work on this band. The internal tuner remembers the L/C settings every 100 Kc, so the tuner is very quick when changing bands (though the tuner can only handle mild

3:1 SWR's). You can connect 2 antennas to the back of the radio, and can change antennas via a button on the front panel. The software also remembers which antenna port you used on which band. If you are using a tribander and an all band vertical (where some SWR's are a bit high on the band edges), the radio is great in that regards. Band switching is a breeze - the radio remembers, and does, everything for you!

The 736 has an internal switching power supply which is very quiet with respect to RX noise. The PS is internally strappable for either 110v or 220v. Since the radio uses 24v final transistors, there is no means of using a 12v DC power source. A setback if you need/want to power the radio from your car. Even including the PS, the radio weighs in at a svelte 23 pounds. Great for hand-carrying on an airplane.

While the radio is quite polished and I would heartily recommend this radio to anyone looking for a true plug-n-play expedition radio, there are a few quirky things: There is no monitor on SSB, and compression is set by a knob on the back of the radio - you will need another RX to check your audio quality. The CW sidetone level and VFO display brightness can only be set by an internal pot after taking the covers off (a small hole drilled in the left side panel would have solved the access to the LCD brightness - an easy mod). The internal keyer speed is not very linear around 20-30 wpm, widely used speeds in contesting. On CW, the PBT is very quick, and you tend to chop out the interference as well as the desired signal. It would be nice to have filter options for SSB. The AGC only has a fast/slow option, but no AGC-off position. It would be nice to have a separate receive antenna jack.

(Icom 736 Con't Page 7, col 1)

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(from 736 Con't from Page 6)

All in all, I consider these to be minor inconveniences as compared with the wealth of features this radio packs in such a small package.

As of July 1994, the radio typically sells for around \$1875. Not bad for all the latest stuff including 100w on 6m, an internal antenna tuner, and the switching power supply. Unfortunately only 80 radios were originally shipped to the USA, and they were promptly snapped up. Many stores are on back order from ICOM, or only get one or two now and then. But the waiting lists can be long at a particular store. If you call some of the smaller, lesser known dealers, you should be able to find one for immediate shipping.

Here's a P.S. Ken added in case you asked.

The "note pad" is just 2 buttons, there is no other indication besides that. They are located just to the right of the main tuning knob, thus making it easy to load frequencies while you are hunting and pouncing. There is no special display associated with the note pad. Once you hit the MP-R button, it changes the main VFO freq to the latest entry in the note pad. Hit MP-R again to toggle the next frequency and so on.

One interesting thing, is that the receive range for 6m goes down to 45 MHz, so you can listen in on cordless phones (on 49 MHz).

The switching power supply is a small and lightweight supply built into the radio. I don't understand the technology too well, but rather than using the standard magnetic transformers, the switching supply switches the frequency of the AC up to 60,000 Hz or so. You can now work with small and lightweight transformers. If it is not designed well, the switching supply can create a lot of RF noise in your RX. This power supply is very quiet, indicating a good power supply design. The PS in the IC736 changes from 110 to 220 by changing an internal strap.

On a personal note. I was born in Yonkers, NY (Hey, no wonder this guy is good!) 1959; Moved to Scarsdale '69; First Licensed in '76 as WN2UHH; Graduate Syracuse University, '82, B.A. in Demographics & Geography; Wash DC and overseas from 1983-1986; Work for NYNEX Mobile Communications 1986-1991; for PacTel/Airtouch, moved here for the job, '91 until today. Current work at Airtouch International is focused on new business acquisition of international wire-free licenses and business. Majority of my time is with cellular communications systems, and RF system analysis.



Treasury Notes

de AA6MC

	1994-95	YTD
	Plan	Actual
Membership dues	\$3780	\$4226
Advertisements	\$ 300	\$ 300
General fund contributions	\$ 100	\$ 404
CQP contributions	\$ 0	\$ 30
Non-member JUG subscriptions	\$ 0	\$ 16.50
Total income	\$4180	\$4976.50
JUG publishing & special mailings	(\$2600)	(\$1159.79)
NCCC share of CQP expenses	(\$ 500)	(\$ 292.73)
Awards	(\$ 650)	(\$ 127.73)
Visalia Hospitality	(\$ 200)	
Contingency	(\$ 230)	
Self-funding events(banquets, badges)	(\$ 0)	(\$ 100.32)
Total expenses	(\$4180)	(\$1680.57)

Balance at start of Fiscal Year 94-95	\$2501.02
Activity credited to Fiscal Year 94-95	\$3295.93
Activity credited to Fiscal Year 95-96	\$ 48.00

GENERAL FUND TOTAL: \$5844.95

We're glad to welcome Bob Cox, K3EST, back to the fold, and also welcome Tom McShane, NW6P, on his way to work us from YK0A.

HEAR YE! HEAR YE!

All Reservations and checks for Holiday Banquet, must be received by Wed. December 7!

We must give final count to the hotel so act immediately. Once the final count is given, the meal must be paid for whether or not someone comes to eat it, thus no refunds for late cancellations or no shows.

Please send your check (made out to NCCC) and your meal selection to me at 1211 Janis Way, San Jose, CA 95125, ASAP. In case your check is in the mail call me at 408-

Banquet is Sunday, December 11, Menlo Room, Stanford Park Hotel, 100 El Camino Real, Menlo Park (North of Stanford Shopping Center, east side of El Camino Real)

Menu: Choice of:

- ___ Filet of Salmon with Cider, Ginger and Pink Peppercorn Sauce
- ___ Fresh Chicken Breast roasted with Herbs and Lemon-

Rosemary Beurre Blanc

Includes: Hearts of Romaine Caesar Salad, Wehani Rice Cake, Seasonal Vegetable, Rolls & Butter Chocolate Cake & Raspberry Sauce
Coffee or Tea Cocktails and Wine at no-host bar

Price \$30 per person, inclusive of tax and service charge

BUT YOU MUST RESERVE AT ONCE !!

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2210 Livingston St.

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— FLASH! NOW 12 STORE BUYING POWER! —



IC-736

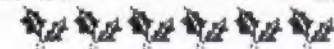


- 10 - 160 M + 6 M Tcvr
- 100 Watts 10 - 160 M
- 100 Watt on 6 Meters
- Built-in Tuner for HF and 6 M
- Built-in Power Supply
- 28 V Mostel Finals
- New DDS (I-Loop)
- Built-in Keyer
- 1 Hz Resolution
- SWR, ALC, PO, S-MTR
- VOX

Special Days Before Christmas

ICOM DAY

December 10-----Sunnyvale



YAESU DAY

December 17-----Oakland

FT-1000



200W, DUAL RX,
GEN COV RX, QSK, TCXO
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December 1994

NCCC

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Greetings

